APPENDIX D -- Work Plan

I. Project Title and Project Purpose Statement

The Northern Manhattan Climate Resilience Initiative is a community climate resiliency project that relates directly to the EPA Clean Air Act. The project will build on WE ACT's clean air and climate resilience record, and its current efforts to involve 100 Northern Manhattan (NM) community members and stakeholders in identifying, prioritizing and developing adaptation, mitigation and social cohesion solutions to local climate-related health and welfare impacts among vulnerable, low-income communities. These efforts, funded by a grant from the Kresge Foundation, will result in the development of a Northern Manhattan Climate Resilience Implementation Plan in July 2015, before our proposed EPA-funded project start date of September 2015.

WE ACT's climate resilience work will focus on urban heat island effect and reduced air quality that disproportionately impacts health outcomes in NM communities. The NM Climate Resilience Initiative will address EPA strategic plan goals (1) to take action on climate change and improve air quality through developing adaptation strategies, and (3) clean up communities and advance sustainable development to protect disproportionately impacted low-income and minority populations.

The project goal is *to engage and empower low-income, NM residents to improve climate resilience and related health impacts within their communities based on community identified challenges and solutions.* The project objective is:

- To, within one year, build the capacity of 100 NM community members to understand connections between climate resilience and public health issues, and to address those issues at the local level.

The Northern Manhattan Climate Resilience Initiative will engage community members and other stakeholders in East, West and Central Harlem and Washington Heights from the following zip codes: 10026, 10027, 10029, 10030, 10031, 10032, 10033, 10034 10035,10037, 10039 and 10040.

II. Environmental, Public Health and Community Climate Resiliency of Affected Community

Urban heat island effect and reduced air quality from climate change disproportionately impacts health outcomes in Northern Manhattan communities. The project will target four communities of color and low-income in Northern Manhattan, specifically East, Central and West Harlem, and Washington Heights/Inwood – a population of over 557,000 in 7.4 square miles. The 2010 census indicates that 37.5% of residents identify as African American, and 48.95% as Latino.

The connection between poverty and the subsequent public health outcomes is recognizable in NM communities. The number of residents living in poverty ranges from 18% to 25%[1], with 11%

[1] NYC Center for Economic Opportunity Poverty Data Tool (2012)

to 16% of adults suffering from diabetes, up to 30% of adults[2] and 27% of children are obese[3] and 19% of adults suffer from asthma[4] and East Harlem asthma rates are up to five times higher than the national average.

GHG emissions, land use, and pollution in Northern Manhattan directly impact local air quality levels, contribute to urban heat island effect and disproportionately affect overall public health. In 2009, the Manhattan Borough President's Office found that the City's 12 "Dirty Dozen" neighborhoods, those most affected by soot pollution, are located in NM and the Bronx. Over 86% of New York City's soot pollution results from the burning of unrefined residual fuels in 9,000 residential, commercial, and institutional buildings across the five boroughs[5]. In addition, NM hosts 6 out of 7 NYC diesel bus depots and the North River Sewage Treatment Plant. The effects of dirty heating fuel, high traffic volumes, and building landscapes disproportionately contribute to poor air quality and breed micro-climates, wherein slight rises in temperature can significantly increase heat-related mortality[6]; and contribute to asthma rates five times higher than the national average.

Our work with the Columbia Children's Center for Environmental health has found that PAH (polycyclic aromatic hydrocarbons) are a pollution threat in the indoor environment. PAHs are emitted into the air when heating fuel is burned, as well as from second hand smoke. The Columbia Center for Children's Environmental Health's studies of mothers and newborns in Washington Heights, Harlem, and the South Bronx have shown that babies exposed to higher levels of PAHs in the womb are born with cell damage that could increase their risk for cancer, breathing problems and asthma diagnoses. Prenatal exposure to PAH reduced birth weight and head circumference in African-American children and several studies have reported that reduction in head circumference at birth or during the first year of life correlates with poorer cognitive functioning and school performance in childhood.

Studies project heat-related mortality to be among the major impacts of climate change on human health in the urban Northeast[7]. The NYC Panel on Climate Change December 2013 predicts significant increases in extreme temperature and heat wave events in NYC from the 2020s to the 2080s. According to the report, New Yorkers can expect to up to 87 more days with temperatures of 90^{o}F by 2080. Heat waves are likely to increase in frequency and intensity for longer periods, specifically increasing from 2 to 9 times annually; with durations doubling from 4 to 8 days in 2080[8]. From 1997 – 2006, heat-related deaths occurred at the highest rates in New York's poorest communities, including NM, with clear associations to neighborhood

[2] NYC Dept. of Health and Mental Hygiene Community Health Survey (2012)
[3] Citizens' Committee for Children Report (2011)
[4] NYC DOHMH. Epiquery: NYC Interactive Health Data System – Community Health Survey 2012. December 23, 2014
[5] "The bottom of the barrel: how the dirtiest heating oil pollutes our air and harms our health," Environmental Defense Fund, http://www.edf.org/sites/default/files/10085_EDF_Heating_Oil_Report.pdf
[6] "Fine Scale Mapping of Manhattan's Urban Heat Island," NOAA-CREST, City College of New York Consortium for Climate Change Risk in the Urban Northeast (CCRUN), http://glasslab.engr.ccny.cuny.edu/u/brianvh/UHI/
[7] Petkova EP, Horton RM, Bader DA, Kinney PL. Projected Heat-Related Mortality in the U.S. Urban Northeast. International Journal of Environmental Research and Public Health. 2013; 10(12):6734-6747.
[8] NYC Panel on Climate Change, *Climate Risk Information 2013, Observations, Climate Change Projections and Maps*, Rosenzweig, C. (Lead PI), Kinney, P. (Co-PI), December 2013.

characteristics such as poor housing conditions, lack of access to air-conditioning, impervious land cover and pre-existing health conditions such as hypertension, respiratory/cardiovascular disease, obesity and mental health disorders, particularly in older adults[9]. A recent study on urban micro-climates found East Harlem to be 4° hotter than the rest of Manhattan. In Central Harlem, where more than 1/3 of residents 65 and older live alone and below the poverty line, mortality/morbidity rates remain higher than both Manhattan and New York City.

The Northern Manhattan Climate Resilience Initiative will enable residents to understand the adaptation, mitigation and social cohesion mechanisms to prevent and reduce the urban heat island effect which leads to heat-related mortality and to improve air quality to lessen instance of asthma.

Our assessment of prior and current efforts reveals that residents are concerned but not knowledgeable about climate resilience. Increased occurrence of extreme weather conditions threatens NM communities already experiencing poor environmental health related to housing conditions. Nearly 30% of Harlem residents report that they live in homes with maintenance deficiencies, leaving them vulnerable to mold and urban pest exposures[10]. In 2012, the effects of Hurricane Sandy were felt citywide. NM residents had family members in areas devastated by storm surge, power outages, and food shortages. Central Harlem experienced flooding in underground parking areas and along park esplanades. All New Yorkers experienced public transportation stoppages, school closings, and gas shortages.

Low-income Northern Manhattan community residents will benefit from the creation of a local Climate Resilience Network of 100 NM community stakeholders prepared to effectively advance community-identified strategies that reduce local health risks related to urban heat island effect and reduced air quality.

III. Organization's Historical Connection to the Affected Community

WE ACT is a Northern Manhattan community-based membership organization founded in March 1988 as a result of community struggles over the operations of the North River Sewage Treatment Plant in West Harlem, and the actions of residents who were angry about the unfair treatment their community was receiving. After eight years of organizing and building community capacity to advocate on waste treatment and air quality issues, community actions resulted in the city's $55 million commitment to fix the new "state of the art" plant and, in 1993, a $1.1 million settlement formed an environmental benefits fund for West Harlem. In 1988, WE ACT also sued the Metropolitan Transit Authority (MTA) for building the sixth of seven Manhattan depots in uptown neighborhoods, which house one-third of the largest fleet in the nation. This 18-year campaign and the 1994 Title VI administrative complaint against the MTA resulted in more stringent bus pollution standards, the MTA's switch to hybrid electric

[9] Rosenthal, Joyce Klein, Ph.D., Evaluating the impact of the urban heat island on public health: Spatial and social determinants of heat-related mortality in New York City, Columbia University Urban Planning. [2010] Permanent URL: http://hdl.handle.net/10022/AC:P:13764

[10] NYC Tracking Portal (www.nyc.gov/health/tracking) EpiQuery(www.nyc.gov/health/epiquery)

buses, and 95% reductions in tailpipe emissions citywide. These community struggles catalyzed an 18-year research partnership with Columbia Mailman School of Public Health to document community-level environmental exposures and health outcomes, engaging residents and youth in community-based participatory research. Findings have been published in Environmental Health Perspectives and the Journal of the American Public Health Association (APHA).

WE ACT is accountable to over 200 members – WE ACTion Members who reside in Northern Manhattan, and Vision Members who do not. All pay $25 annual dues and engage in understanding local environmental justice issues and in developing and executing campaigns to ensure accountability to community priorities and needs. Members are multi-racial, ethnic and intergenerational. They plan and attend monthly meetings to learn about and advocate for environmental justice on local, regional and national levels. Members organize within 5 working groups (including a Climate Justice Working Group) that plan, implement and vote on strategies to advance WE ACT's projects and initiatives. Membership activities include leadership training, public discussions, teach-ins, broad-scale community projects, and public hearing testimony. A 12-member Planning Group works directly with WE ACT organizers to develop agendas, community-led actions and strategies, and to facilitate partnerships.

WE ACT's mission is to *ensure that people of color and/or low-income participate meaningfully in the creation of sound and fair environmental health and protection policies and practices by engaging with them as active change-agents.* WE ACT has built the capacity of thousands of residents in Northern Manhattan by providing hundreds of hours of training on environmental health impacts and environmental issues, policies and regulations through training workshops developed in collaboration with the Columbia University Mailman School of Public Health over an 18-year partnership. In addition, with funding from the Columbia NIEHS Center for Environmental Health in Northern Manhattan (Columbia NIEHS), WE ACT has provided OSHA training classes to hundreds of Northern Manhattan residents within the past year. Finally, we have bolstered the capacity of elected officials to effective address environmental and environmental health issues that disproportionately impact Northern Manhattan communities they represent by providing briefings and trainings, and organizing community dialogues and public hearings.

In 2012, WE ACT established a Washington, D.C. office to more effectively engage federal agencies, public interest advocates, and elected officials in adopting fair and equitable federal, state, and local environmental justice policies. Our DC Office coordinates and manages the efforts of the Environmental Justice Leadership Forum on Climate Change, a coalition of 31 grassroots organizations across 18 states.

Clean Air and Community Environmental Health Accomplishments

- Partnered with 25 organizations on Mayor Bloomberg's Sustainability Advisory Board to develop PlaNYC in 2007, one of the country's boldest carbon reduction strategies. WE ACT participated in five biweekly work groups to develop the framework and supporting elements of the plan, and to ensure that the plan developed initiatives on Food Security,

Clean Heat, Brownfield Opportunities and the NYC Community Air Survey that monitors and uploads maps and website data on seasonal air quality at 170 sites, citywide.

- WE ACT and Community Board 9 organized and facilitated the 10-year multi-stakeholder community-based planning process that transformed a paved parking lot into community residents' vision for an open green space in West Harlem Piers Park, helping to reduce GHGs.

- As part of The Northern Manhattan Clean Heat Initiative, provided 219 Building Owners with information materials on the environmental and economic benefits of fuel conversation and mandates associated with the no.4 oil phase out in 2014; successfully converting 52 buildings to cleaner fuel, which contributed to a 4% reduction in soot polluting buildings in Central, West and East Harlem, and Washington Heights/Inwood.

- Organized an 8-year, community-led ask force which empowered more than 200 residents to act in the re-designing of the Mother Clara Hale Bus Depot, the nation's first green bus station. The re-opening in December 2014 signaled improved air quality and quality-of-life for residents of Harlem's 1,870-unit Esplanade Garden and 24,000 neighbors.

- Increased the capacity of over 250 grassroots advocates nationwide to understand and engage in the EPA Clean Power Plan processes in 2014, by organizing and hosting a national webinar that provided the perspectives of 8 experts on the rule's elements and potential impact on low income, communities of color.

IV. Project Description

The NM Climate Resilience Initiative relates directly to the EPA Clean Air Act. The project focus seeks to increase community understanding and capacity to address health and welfare effects of climate change through community engagement.

Local environment, public health, community climate resiliency results the project seeks to achieve.

NM community residents will benefit from NM Climate Resilience Initiative's creation of NM Climate Resilience Network, a cadre of 100 NM community members trained and prepared to effectively advance the community-identified climate resilience solutions and recommendations. EPA funding will help WE ACT close the a gap in the implementation of its 3-year NM Climate Resilience Implementation Plan, by supporting the development and implementation of resilience training modules that deepen residents' understanding of how climate solutions can be driven by community collaboration and by public process . We will then engage trainees in developing community work plans based on identified solutions in the NM Climate Resilience Implementation Plan for future implementation.

How efforts will increase community capacity.

By the proposed project start date (September 2015), WE ACT will have completed its three-year Northern Manhattan (NM) Climate Resilience Implementation Plan after undertaking a rigorous, solution-based planning process supported by a grant from the Kresge Foundation. To

develop the plan, WE ACT is currently engaging 100 diverse community residents and multi-sector stakeholders in *Serious Games*, a solution-based, facilitated framework that grounds stakeholder working groups from the four NM target geographies in examining climate change health and environmental impacts, and in building solution-sets/ideas/approaches based on adaptation, mitigation and social cohesion strategies. Stakeholders are taking part in plenary discussions, solution development, review and vetting processes with leading experts in the fields of climate change, social and health research and policy advocacy, and with key city-level officials and decision-makers. We are informing the process with the latest scientific data on climate impact/threats in the urban northeast, including emerging data on local neighborhood impacts and health disparities, such as heat mortality/morbidity and asthma rates, shared by planning partners.

By July 2015, NM Climate Resilience Implementation Plan stakeholders will emerge from the planning process with the capacity to:

- Identify key adaptation, mitigation and social cohesion issues that affect or are likely to affect NM and other low-income, NYC communities.
- Understand the health, environmental and socio-economic impacts of climate change on low-income residents in NM and citywide.
- Take on leadership roles in the implementation of community-identified climate resilience solutions in part, for the purpose of ensuring that PLANYC 2030, New York City's most significant sustainability "blueprint", is both comprehensive and equitable in addressing the health impacts, priorities and needs of vulnerable NM residents and other low-income NYC communities.

WE ACT will develop a 3-year implementation plan through the community planning process which will serve as the framework for the creation of a Climate Resilience Network. Communities must, however, understand environmental sustainability policy-making processes before they can map best approaches to civic engagement in environmental policy decisions that improve climate-related health outcomes. Unfortunately, the policy-making process tends to be difficult for almost anyone to understand completely. While final decision-making can take a very long time, the public consultation process is often short and does not allow time for community-based organizations and low-income individuals to prepare for effective civic participation. An important next step is to train participants to understand linkages between climate change and health, and to access public processes and existing resources.

Activities to educate, empower and enable the community to understand climate resiliency.

WE ACT will use EPA funding to support the project goal to educate and empower NM community residents to improve climate resilience and related health impacts within their communities. We will work toward achieving this project's community climate resiliency goals by undertaking the following objectives and related activities:

Objective 1. To, within 1 year, build the capacity of 100 Northern Manhattan community members to create the Northern Manhattan Climate Resilience Network.

Activities
1a. Develop, within 6 weeks, two Community Climate Resilience Training modules based, in part, on the NM Climate Resilience Implementation Plan.

Training Module 1 will provide information and resources related to the Clean Air Act, the President's Climate Action Plan, local air quality reduction, urban heat island affects and related outcomes. The module will incorporate community-identified adaptation, mitigation and social cohesion strategies and solutions from the NM Climate Resilience Implementation Plan.

Training Module 2:
Part A - Non-Government Action. This module will teach community members approaches to community-based climate resilience strategies, with a focus on informal collaboration to implement green roofs, sustainable streetscapes, identify cooling centers, develop community messaging systems for at-risk health days, and use online crowd-sourcing tools for local sustainability projects, among other things.

Part B – Understanding Local Public Process. Community members will deepen their understanding of public processes and decision-making for addressing local climate resilience and environmental sustainability priorities and needs. The module will focus on civic engagement with community boards, city council members and city environmental sustainability and public health agencies.

1b. Recruit, within 4 to 6 weeks, at least 100 community members/stakeholders to participate in Community Climate Resilience Training modules. (mid-September to November 1, 2015)

1c. Implement a series of four, facilitated training sessions that engage at least 25 community stakeholders from the each of the four target geographies in the Community Climate Resilience Trainings. Saturday training sessions will occur as one, 5-hour session per month. (November 2015 and February 2016.)

Training Session Agenda:
- Introduction/and Ice-breaker – 45 minutes
- Overview of health impacts in each of the Nm target geographies as they relate to urban heat island effect and reduced air quality; Q & A – 60 minutes
- 15 minute Break
- Module 2/Part 1. Non-Government Action Module/Q & A – 60 minutes
- Module 2/Part 2. Understanding Local Public Process – 75 Minutes
- Participant Evaluation Survey Implementation – 20 minutes.

1d. Develop and administer post-training evaluation to assess participant knowledge gained. After each of the four training sessions, WE ACT will adjust and improve training module content and presentations based on participant feedback**. (September - February 2016)**

1e. Review and refine training modules based on participant feedback **(March – April 2016.)**

Objective 2. To, within four months, engage 100 trained NM residents in a minimum of 3 initiatives to advance community climate resilience.

2a*.* Convene four meetings with 100 Climate Resilience trainees to develop climate resilience workplans based on identified in the NM Climate Resilience Implementation Plan. Working groups could be based on heat mortality, adaptation, mitigation, social cohesion, green infrastructure, emergency preparedness. Community members will develop local resilience action agendas that incorporate elements of the NM implementation plan, knowledge gains from the CR training modules (May – Sept 2016)

TIMELINE

EPA EJ SMALL GRANTS - Northern Manhattan Climate Resilience Initiative

PROPOSED TIMELINE

OBJECTIVES	Sept 2015	October	Nov	Dec	January 2016	Feb	March	April	May	June	July	August
1. To, within 1 year, build the capacity of 100 Northern Manhattan community members to create the Northern Manhattan Climate Resilience Network.	**1a**. Develop two traning modules (6wks)											
	1b. Recruit at least 100 community participants (4-6 wks)		**1c.** Implement four training sessions (1 per month)									
	1d. Develop and administer evaluation tool.											
							1e. Review / refine modules					
2. To, within 4 months, engage 100 trained NM residents in a minimum of 3 initiatives to advance community climate resilience.									2a. Convene four meetings of trainee working groups to create action agendas			

PARTNERS

The NM Climate Resilience Initiative is a WE ACT led program and we will be the singular organization carrying out the project.

V. Organizational Capacity and Programmatic Capability

WE ACT uses FUND EZ to manage, expend and account for all federally-funded grant projects. Our Director of Administration/Human Resources administers all project payments through invoicing for outside vendors; and check request forms which must be filled out by project managers prior to all expenditures. As a first step, we upload the final project budget and award information into the accounting system. We then tie all subsequent project accounting information to built-in FUND EZ cost codes that categorize revenue and expenditures by funding source, program area and project area. The system allows us to monitor expenditures

against restricted funding sources and uses, and generate accurate financial information associated with all report requirements. Passwords are used to ensure various levels of security and accountability. To further prevent the misuse of any funds, the Board Treasurer meets with the Director of Administration/Human resources monthly to consolidate and review all financial accounting. The Treasurer reports to the full Board of Directors on a quarterly basis. We will use the above accounting system and methods to successfully manage and complete our project. WE ACT has answered the federal congressional survey administered by EPA, which formed the basis for WE ACT's 15-page federal grants management workbook.

VI. Qualifications of the Principal Investigator or Project Manager

Aurash Khawarzad, *Environmental Policy & Advocacy Coordinator*, is an urban planner and educator hired by WE ACT in January 2014. He is responsible for developing, managing and coordinating the suite of activities related to community and stakeholder engagement in the Northern Manhattan Climate Resilience planning initiative; and assisting in the draft and finalization of the Northern Manhattan Climate Resilience Implementation Plan. He will report to his manager, Deputy Director Cecil Corbin-Mark, and Executive Director Peggy Shepard, a former chair of EPA's NEJAC, and a co-PI of the EPA-NEIHS funded Columbia Children's Environmental Health Center. Mr. Khawarzad has a key role in identifying, recruiting and establishing community trust and in deepening stakeholder understanding about the importance and potential impact of participation in a community-identified climate resilience implementation plan. He is best-positioned to leverage knowledge and existing relationships to advance WE ACT's community-based climate resiliency efforts. Aurash has played a key role in coordinating panels and plenary discussions for WE ACT's March 2014 New York Transportation Equity Alliance Conference in Albany, NY. He has also been an asset to community-led efforts to re-purpose the 135th Street Marine Garbage Transfer Station, assisting in the facilities transfer from NYC Department of Sanitation jurisdiction. Mr. Khawarzad holds a BS in Urban Studies, and received a Master of Urban and Regional Planning from Virginia Tech University. As an Adjunct Professor at Parsons New School for Design, he teaches courses in community-based planning.

VII. Past Performance in Reporting on Outputs and Outcomes

WE ACT has responsibly managed EPA and other federally funded grants for over 20 years. In the past WE ACT has met all requirements of reporting, output and outcomes. Given our expertise and collaboration with academic institutions, WE ACT has set up a number of mechanisms to keep track of progress. In each grant we met our objectives and reported on outputs and outcomes through the use of pre and post tests, to measure knowledge gain. WE ACT collects sign in sheets at all meetings, agendas, documentation of materials distributed at events, copies of outreach and communication materials produced, and finally, submit all reporting documents required EPA. This has been accomplished for the following grants:

1. EPA Grant Number: RE 97214701 Project Title: Northern Manhattan CARE Collaborative Project **Duration**: 10/1/2010 – 9/30/2012 Amount **Funded**: $300,000 **Project Synopsis**: Continuing support of the NM CARE Collaborative as a CARE Level II partnership of broad based

stakeholders based in Northern Manhattan, NYC, and NY State to reduce risk from toxic exposures in this community, specifically with relation to solid waste, and pests and pesticides.

2. EPA Grant Number: EQ97223910 Project Title: Community Climate Change Readiness Campaign: Developing a Community-Based Climate Change Water Infrastructure and Health Readiness Plan for Northern Manhattan **Project Duration**: July 1, 2010 – June 30, 2011 **Amount Funded:** $25,000 **Project Synopsis**: WE ACT's Community Climate Change Readiness Campaign is an initiative aimed at collaboratively working with NY State and NYC agencies and with local community members to develop a climate change readiness planning process that addresses NM-specific needs.

3. EPA Star Grant Sub Award: 0023157 (407130-1); **Prime Grant Award EPA STAR Number with University of Pittsburgh**: RD -83457601 **Project Title:** Community Stressors and Susceptibility to Air Pollution in Urban Asthma **Project Duration**: 3/1/2011 - 2/28/2015 **Amount Funded**: $347,877 **Project Synopsis**: Epidemiologic evidence suggests that chronic stress, which alters immune function and other physiologic parameters, may alter individual susceptibility to the health effects of traffic-related air pollution. Social stressors (i.e., poverty) and pollution may be spatially correlated, clustered in lower-income communities; thus, the most pollution-exposed communities may also be most susceptible. Understanding this interplay is critical to protecting susceptible populations and improving public health.

4. EPA Grant Number: EQ97206011-0 Project Title: Building Community Capacity to Reduce Lead Poisoning Hazards **Project Duration:** 10/01/2011 – no cost extension to 06/30/2014. **Amount Funded:** $50,000 **Project Synopsis**: The goal of this project is to expand scientific knowledge on best practices/methods for the identification of lead poisoning hazards in the home, and to build community capacity to detect and report lead poisoning hazards from multiple sources in NM and the South Bronx.

VIII. Quality Assurance Project Plan (QAPP) Information

WE ACT does not anticipate the collection of new data to complete the project activities of objectives. *(See Appendix F, attached.)*